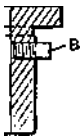

has been found to be a very good one: Drill and tap a f- or f-inch hole in the side of the jig bushing, as indicated in Fig. 12. After the bushing is hardened and ground, screw in a pin and cut it off so that it projects about fV inch outside of the bushing, as at *B.* Chip out a slot in each hole in the jig as indicated at *A,* the hole being chipped in the direction of a spiral. By engaging the projecting pin in this slot, the bushing is prevented from turning and from rising out of the hole. At the same time it can easily be removed when required, and there is no projection on the jig of any kind that can be broken off while handling. It is not always necessary to tap a hole for the pin in the jig bushing. A plain drilled hole is sufficient when the bushing is at least f inch thick. If the wall of the bushing is thinner than this, the pin cannot be driven in tightly enough to stay in place securely.

Fig. 12. Another Method for Preventing Drill Bushings from Turning

Dimensions of Removable Bushings. — In Table III are given dimensions for removable bushings of the type shown in Fig. 8. Table IV gives dimensions for bushings for holes which are reamed with a rose chucking reamer, after having first been

drilled with a drill y[1]^ inch smaller than the diameter of the reamer with which the hole is finally reamed out. The bushing to the extreme right, over the table, is the lining bushing, which is made of machine steel, casehardened and ground. The bushing to the extreme left is the bushing for the rose chucking reamer. It is made of cast iron and ground. The bushing in the center is the drill bushing which is made from tool steel, hardened and ground, or, in cases where it does not seem warranted to make the bushing of tool steel, of machine steel, case-hardened and ground.

The tapered removable bushing shown in Fig. 9 is objection-